WHAT IS CLAIMED IS:

1. A temporal scalable moving-picture video signal coding method comprising the steps of:

converting an input interlaced moving-picture video signal into a progressive moving-picture video signal at the same frame rate as the interlaced moving-picture video signal;

encoding the progressive moving-picture video signal to produce a first bitstream;

encoding fields of the interlaced moving-picture video signal, the fields being different in time from frames of the progressive moving-picture video signal, with inter-picture prediction using a locally decoded picture signal as a reference video signal, the locally decoded picture signal being produced by locally decoding the progressive moving-picture video signal, thus producing a second bitstream;

and

multiplexing the first and second bitstreams into an output temporal scalable moving-picture video bitstream.

2. A temporal scalable moving-picture video signal decoding method comprising the steps of:

demultiplexing a bitstream produced by temporal scalable moving-picture coding into a first bitstream and a second bitstream, the first bitstream having been produced by encoding a progressive moving-picture video signal at the same frame rate as an interlaced moving-picture video signal to be reproduced, the second bitstream having been produced by encoding fields of the interlaced moving-picture video signal, the fields being different in time from frames of the progressive moving-picture video signal;

decoding the first bitstream to reproduce a progressive moving-picture video signal;

converting the reproduced progressive moving-picture video signal into a first field video signal having either

even- or odd-number fields of the interlaced moving-picture video signal;

decoding the second bitstream with inter-picture prediction using the reproduced progressive moving-picture video signal as a reference video signal, thus producing a second field video signal having fields of the interlaced moving-picture video signal, the fields of the second field video signal being different in parity from the fields of the first field video signal; and

switching the first field video signal and the second field video signal to output the interlaced moving-picture video signal.

3. A temporal scalable moving-picture video signal coding apparatus comprising:

a converter to convert an input interlaced moving-picture video signal into a progressive moving-picture video signal at the same frame rate as the interlaced moving-picture video signal;

a first bitstream generator to encode the progressive moving-picture video signal, thus generating a first bitstream;

a second bitstream generator to encode fields of the interlaced moving-picture video signal, the fields being different in time from frames of the progressive moving-picture video signal, with inter-picture prediction using a locally decoded picture signal as a reference video signal, the locally decoded picture signal being produced by locally decoding the progressive moving-picture video signal, thus producing a second bitstream;

and

a multiplexer to multiplex the first and second bitstreams into an output temporal scalable moving-picture video bitstream.

4. The temporal scalable moving-picture video signal

coding apparatus according to claim 3 further comprising a scanning-line down-sampler to which the progressive moving-picture video signal obtained by the converter is supplied, the down-sampler down-sampling the progressive moving-picture video signal in a spatial vertical direction to produce a progressive moving-picture video signal having a smaller number of scanning lines than the progressive moving-picture video signal obtained by the converter,

wherein the progressive moving-picture video signal having the smaller number of scanning lines is supplied to the first bitstream generator, thus a third bitstream having the smaller number of scanning lines being generated, and

the second bitstream generator has a scanning-line up-sampler to up-sample a locally decoded video signal in the spatial vertical direction, the locally decoded video signal being obtained by locally decoding the third bitstream to produce a video signal having the same number of scanning lines as the progressive moving-picture video signal supplied to the down-sampler, the produced video signal being uses as the reference video signal.

5. A temporal scalable moving-picture video signal decoding apparatus:

a demultiplexer to demultiplex a bitstream produced by temporal scalable moving-picture coding into a first bitstream and a second bitstream, the first bitstream having been produced by encoding a progressive moving-picture video signal at the same frame rate as an interlaced moving-picture video signal to be reproduced, the second bitstream having been produced by encoding fields of the interlaced moving-picture video signal, the fields being different in time from frames of the progressive moving-picture video signal;

a first decoder to decode the first bitstream to reproduce a progressive moving-picture video signal;

a converter to convert the reproduced progressive

moving-picture video signal into a first field video signal having either even- or odd-number fields of the interlaced moving-picture video signal;

a second decoder to decode the second bitstream with inter-picture prediction using the reproduced progressive moving-picture video signal as a reference video signal, thus producing a second field video signal having fields of the interlaced moving-picture video signal, the fields of the second field video signal being different in parity from the fields of the first field video signal; and

a switch to switch the first field video signal and the second field video signal to output the interlaced moving-picture video signal.

6. The temporal scalable moving-picture video signal decoding apparatus according to claim 5, wherein the demultiplexer demultiplex the bitstream produced by temporal scalable moving-picture coding into the second bitstream and a third bitstream produced by encoding a progressive moving-picture video signal down-sampled in a spatial vertical direction at the same frame rate as the interlaced moving-picture video signal to be reproduced, the first decoder decoding the third bitstream into the down-sampled progressive moving-picture video signal and up-sampling the down-sampled and decoded progressive moving-picture video signal in the spatial vertical direction, and the converter converting the up-sampled progressive moving-picture video signal into the first field video signal.

7. A computer-implemented method for temporal scalable moving-picture video signal coding comprising the steps of:

converting an input interlaced moving-picture video signal into a progressive moving-picture video signal at the same frame rate as the interlaced moving-picture video signal;

encoding the progressive moving-picture video signal

to produce a first bitstream;

encoding fields of the interlaced moving-picture video signal, the fields being different in time from frames of the progressive moving-picture video signal, with inter-picture prediction using a locally decoded picture signal as a reference video signal, the locally decoded picture signal being produced by locally decoding the progressive moving-picture video signal, thus producing a second bitstream;

and

multiplexing the first and second bitstreams into an output temporal scalable moving-picture video bitstream.

8. A computer-implemented method for temporal scalable moving-picture video signal decoding comprising the steps of:

demultiplexing a bitstream produced by temporal scalable moving-picture coding into a first bitstream and a second bitstream, the first bitstream having been produced by encoding a progressive moving-picture video signal at the same frame rate as an interlaced moving-picture video signal to be reproduced, the second bitstream having been produced by encoding fields of the interlaced moving-picture video signal, the fields being different in time from frames of the progressive moving-picture video signal;

decoding the first bitstream to reproduce a progressive moving-picture video signal;

converting the reproduced progressive moving-picture video signal into a first field video signal having either even- or odd-number fields of the interlaced moving-picture video signal;

decoding the second bitstream with inter-picture prediction using the reproduced progressive moving-picture video signal as a reference video signal, thus producing a second field video signal having fields different in parity from the fields of the first field video signal; and

switching the first field video signal and the

second field video signal to output the interlaced moving-picture video signal.